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10/657,953	09/09/2003	Hamid Ould-Brahim	42871-0007	3046

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EXAMINER
RUSSELL, WANDA Z

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 March 2008</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-12</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-12</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

3/10/2008 has been entered.

Claim Objections

2.   Claim 5 is objected to because of the following informalities:

It should show "currently amended", not "previously amended".

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ould-Brahim et al. (BGP/GMPLS Optical VPNs, hereafter Ould-Brahim 1) further in view

of Ould-Brahim et al. (GVPN: Generalized Provider-provisioned Port-based VPNs using

BGP and GMPLS, hereafter Ould-Brahim 2).

For **claim 1**, Ould-Brahim 1 disclose a network (Fig. 2) for providing multi-service

generalized Layer-2 Virtual Private Network (VPN) services, said network comprising:

a set of elements interconnected by services (Fig. 2, a set of elements containing

customer edge routers (CE) and provider edge routers (PE));

at least one first subset of said elements defining a private network (Fig. 2,

subset CEs defining virtual private networks such as VPN-A);

at least one second subset of elements different from said first subset defining a

provider network wherein at least two subgroups of said first subset of elements may be

connected via said provider network (Fig. 2. Subset of PEs is a provider network, two

subgroups such as the CE1 and the CE2 that are in the same VPN-A are connected

together through the PE provider network. Refer to P. 3, second paragraph from the end

of P. 3 with "A pair" at the beginning.);

a provisioning mechanism used to define element membership in said first

subset of elements (single end provisioning adds a new port to a given VPN involves

changes only on the devices connected to that port, refer to P. 1 in abstract); and

a signaling mechanism used to create connectivity between elements within said

first subset of elements, said connectivity created across said second subset of

elements (GMPLS signaling to create connection between client devices that are

connected to the customer edge routers, refer to P. 7 par. 6 with "once" as the first

word), said signaling mechanism having a multi tunnel selector mechanism used to

create said connectivity (if a port by which a CE is connected to a PE ONE consists of

multiple channels, the CE could establish optical connection to multiple other CEs over

this single port, refer to P. 3, second paragraph from the end of P. 3 with "A pair" at the

beginning).

However Ould-Brahim 1 does not explicitly disclose generalized Layer 2 VPN, and said connectivity at a layer selected from one or both of the group consisting of Layer-2 and Layer-1, and the multi channels have multi-service.

Ould-Brahim 2 disclose a generalized (Title) Layer 2 VPN (P. 14, par. 2, line 3), and said connectivity (Virtual Routers, refer to P. 14, par. 2) at a layer selected from one or both of the group consisting of Layer-2 and Layer-1 (P. 14, par. 2), and the multi channels have multi-service (channels on different links of a CE need not have the same characteristics, refer to P. 4, second paragraph below Fig. 1).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Ould-Brahim 1 and Ould-Brahim 2 so that the service is generalized as the interfaces on the customer's ports and provider ports could be any of the interfaces supported by generalized MPLS (GMPLS).

For **claim 2**, Ould-Brahim 1 and Ould-Brahim 2 disclose everything claimed as applied above (see claim 1).

However Ould-Brahim 1 does not explicitly disclose a network discovery mechanism used to propagate membership information regarding elements which are members of said first subset; and a service discovery mechanism used to propagate services information regarding services interconnecting elements in said first subset with elements in said second subset.

Ould-Brahim 2 disclose a network for providing multi-service generalized Layer-2 VPN services as claimed in claim 1, said network further comprising:

a network discovery mechanism used to propagate membership information regarding elements which are members of said first subset (auto-discovery procedures, P. 7, 6th par. with the "propagation" as the first word, lines 1-2); and

a service discovery mechanism used to propagate services information regarding services interconnecting elements in said first subset with elements in said second subset (auto-discovery procedures, refer to P. 7, 6th par. with the "propagation" as the first word, lines 1-2).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Ould-Brahim 1 and Ould-Brahim 2 for more service information propagation.

For **claim 3**, Ould-Brahim 1 and Ould-Brahim 2 disclose everything claimed as applied above (see claim 1). In addition, Ould-Brahim 1 disclose a network for providing multi-service generalized Layer-2 VPN services as claimed in claim 1, said signaling mechanism having:

a manager mechanism having a first portion (tariff structure, P. 4, third par. with "since" as the first word, line 4) used to effect connection admission control and a second portion (alternative tariffs, same par., line 5) used to select encapsulation in response to a connection request (same par., last 2 lines).

For **claim 4**, Ould-Brahim 1 and Ould-Brahim 2 disclose everything claimed as applied above (see claim 1 and 3). In addition, Ould-Brahim 1 disclose a network for providing multi-service generalized Layer-2 VPN services as claimed in claim 3, said network further comprising:

a generalized single-sided signaling mechanism used to initiate said connection

request triggered by an element of said first subset (P. 4, 2nd par. with the "The service"

at the beginning, last 2 lines, and signaling, P. 7, 2nd par. before P. 8 with "Once" as the

first word, line 3, and lines 1-5).

For **claim 9**, Ould-Brahim 1 and Ould-Brahim 2 disclose everything claimed as

applied above (see claim 1). In addition, Ould-Brahim 1 disclose a network for providing

multi-service generalized Layer-2 VPN services as claimed in claim 1 wherein said

provider network is a non-Multi-Protocol Label Switched provider network (BGP route-

Fig. 2. BGP route is Border Gateway Protocol that is non- Multi-Protocol Label Switched

provider network).

For **claim 10**, Ould-Brahim 1 and Ould-Brahim 2 disclose everything claimed as

applied above (see claim 1). However Ould-Brahim 1 does not explicitly disclose a

network for providing multi-service generalized Layer-2 VPN services as claimed in

claim 1 wherein said connectivity uses layer-2 pseudo-wires.

Ould-Brahim 2 disclose a network for providing multi-service generalized Layer-2

VPN services as claimed in claim 1 wherein said connectivity uses layer-2 pseudo-wires

(P. 14, par. 3 with "While" as the first word, line 3 & lines 1-end).

Therefore, it would have been obvious for one skilled in the art at the time of the

invention to combine the teachings of Ould-Brahim 1 and Ould-Brahim 2 to offer layer 2

VPNs to other devices.

For **claim 11**, Ould-Brahim 1 and Ould-Brahim 2 disclose everything claimed as

applied above (see claim 1). In addition, Ould-Brahim 1 disclose a network for providing

multi-service generalized Layer-2 VPN services as claimed in claim 1 wherein said

connectivity uses layer-1 connections (Ethernet switch, P. 2, the first par. under Section

2 with "Consider" as the first word, last line. It can be seen that the Ethernet switch uses

layer-1 connections).

For **claims 5-8, and 12,** they are method claims corresponding to claim 1-4, and

9 respectively. Therefore they are rejected for the same reason above.

Response to Amendment

1.   Applicant's amendment filed 3/10/2008 has been received and considered.

Claims 1, 3, 5, 7, 11 amended.

Response to Arguments

2.   Applicant's arguments filed 3/10/2008 have been fully considered but they are

not persuasive.

3.   Applicant argues that neither Ould-Brahim 1, nor Ould-Brahim 2, disclose a

signaling mechanism having a multi-service tunnel selector mechanism.

In response, the Examiner respectfully disagrees.

Ould-Brahim 1 discloses "if a port by which a CE is connected to a PE ONE

consists of multiple channels, the CE could establish optical connection to multiple other

CEs over this single port", refer to P. 3, second paragraph from the end of P. 3, and

Ould-Brahim 2 discloses "channels on different links of a CE need not have the same

characteristics, refer to P. 4, second paragraph below Fig. 1".

It can be seen that they disclose the multi-service tunnel selector mechanism.

See rejection above for more details.

Application/Control Number: 10/657,953   Page 8
Art Unit: 2616

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WANDA Z. RUSSELL whose telephone number is (571)270-1796. The examiner can normally be reached on Monday-Thursday 9:00-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Seema S. Rao/
Supervisory Patent Examiner,
Art Unit 2616

WZR/Wanda Z Russell/
Examiner, Art Unit 2616